

**FINDING A PROPER UNIFORM IN AN  
N.F.P.A. 1975 WORLD!**

EXECUTIVE DEVELOPMENT

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## ABSTRACT

The fire service is caught in an atmosphere of change that encompasses much of what we do and how we do it. This atmosphere of change includes our uniforms. The problem is determining what uniform options will work best in the Mansfield Fire Department.

The purpose of this applied research project was to evaluate the various uniform options available for fire service uniforms, determine public and fire service perceptions associated with each uniform style, and develop a Departmental Operating Guideline for uniform wear in the Mansfield Fire Department. A descriptive research methodology was used to answer the following applied research questions:

1. What styles of uniforms are currently in use by the fire service in our area?
2. What fabrics are available for use in fire service uniforms?
3. How compliant is the fire service in our area with the provisions of *NFPA 1975, Standard on Station/Work Uniforms in the Fire Service*?
4. What are the perceptions of the public and the fire service as it relates to fire service uniforms?

The procedures used to complete this applied research project included a review of Professional journals, Executive Fire Officer research projects, technical reports, newspaper articles, national standards, and web sites. In addition, surveys were utilized to capture information from the public and the fire service on uniform issues. Informal interviews were conducted with various firefighters, chief officers, and representatives of the textile industry to seek further information on uniform issues. The results were that there are a large number of uniform styles in use in the fire service. Several fabrics are available that comply with the

provisions of *NFPA 1975*. Some of these fabrics warranted further evaluation and field-testing. Each fabric has its own benefits, but most also has its own drawbacks. It is our intent to field test several products in the immediate future. The research did find that regardless of the uniform fabric worn, the presence of a 100 % cotton undergarment or tee shirt makes a very significant impact towards reducing burn injuries. It was further found that most of the departments in the Dallas-Fort Worth metropolitan area are not in compliance with the provisions of *NFPA 1975* and that the percentage of departments in compliance has not changed significantly since 1992. It was further found that the general public prefers to see firefighters in a uniform consisting of a button up style uniform shirt with patches, badge, and a nametag.

Several recommendations were made as a result of this research project. First, a policy was developed governing uniform wear. Second, a recommendation was made that the cotton/polyester tee shirts currently being worn be phased out and replaced with 100 % cotton tee shirts. Third, it is our intent to field test various fire resistive fabrics to see how they perform under actual use. If a satisfactory product can be found, consideration will be given towards using fire resistive uniform components. Some of the fabrics under consideration are Indura, Firewear, Flamex II, Nomex IIIA, Valzon, and 100 % cotton.

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## INTRODUCTION

“There is an old saying that the clothes make the man (or woman). If that is true, then the right uniform certainly can benefit the emergency responder” (Sharp, 1991, p.61). Uniforms are an integral part of the fire service. They are the component that makes us stand out in a crowd. The uniform is that piece of distinctive clothing that tells the world who and what we are. Uniforms serve many other functions as well. Uniforms are the luggage, which carry our pens, notepads, and other tools of the trade. Uniforms are the forum by which we notify our peers and the general public who we are, where we work, and in some cases, how we are trained and our rank in our organization. Uniforms also have the capability of offering us a certain level of protection from injuries and infectious diseases. Despite this, or perhaps because of this, uniforms are a very controversial and evolving part of the modern fire service. The Mansfield Fire Department is revisiting its uniform design and uniform wear policies. The problem is determining what uniform options will work best in the Mansfield Fire Department.

The purpose of this applied research project is to evaluate uniform options available in the fire service, obtain information on issues and perceptions surrounding uniforms and compare the findings against the Mansfield Fire Department informal uniform policy. A recommendation will be made as a part of this applied research project concerning the Mansfield Fire Department uniform and policies for wearing the uniform.

This applied research project employed a descriptive research methodology to answer the following applied research questions:

1. What styles of uniforms are currently in use by the fire service in our area?
2. What fabrics are available for use in fire service uniforms?

3. How compliant is the fire service in our area with the provisions of *NFPA 1975, Standard on Station/Work Uniforms in the Fire Service*?
4. What are the perceptions of the public and the fire service as it relates to fire service uniforms?

### **BACKGROUND AND SIGNIFICANCE**

The problem is that our daily uniform has become an issue with the firefighters within the organization. Some want to change our current uniform style and the informal policies that regulate uniform wear. Management is faced with the challenge of insuring that our uniforms are safe, functional, and comfortable for the employees, while sending a proper and professional signal to the citizens in the community. As a result, this research project has a direct linkage with the labor relations and the service quality/marketing components of the Executive Development course. Our current uniform consists of a light blue, button up cotton/polyester blend uniform shirt worn over a light gray 50/50-blend cotton/polyester uniform tee shirt. Pants consist of either EMS style pants or slacks of a cotton/polyester blend.

In the past we have tried a number of different uniform approaches that haven't worked out. These included dark blue uniform tee shirts, jump suits and Dickies work uniforms both with and without required baseball caps. We have also tested golf style shirts on a very limited basis. While no uniform policy can be created that will satisfy everyone, it is hoped that a reasonable compromise based on fact can be used to resolve some of the uniform issues that keep recurring within our organization.

A current survey of the employee organization indicates much conflict on the topic of uniform wear. Employees want everything from the current uniform style, to golf shirts, long

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sleeve Nomex, long sleeve tee shirts, jump suits, blue jeans and shorts. Other issues include the color of the uniform, a question of if we should have identification on the back of the uniforms, and the fabric to be used as well as when the various uniform combinations are to be worn. A visitor to a station today might find personnel wearing one of two tee shirt styles, workout gear, traditional blue uniform shirts, sweatshirt tops, one of three different hat colors, one of several pants options, or any combination thereof. This is in apparent conflict with an employee organization that asked for and received a ribbon recognition program that provides service ribbons that are worn on the traditional blue uniform shirt.

This research is important to the Mansfield Fire Department. As an employee focused organization, we want to do what is right for the employees. However, several limitations must be included in the equation. They include the need of the public to be able to recognize fire personnel as fire and EMS providers. They also include the needs of funding, safety, and functionality that must be addressed by management. Perhaps the most important limitation is the one created by the employee organization itself. The organization is made up of individuals and it is impossible to completely satisfy the likes and dislikes of every person in the organization.

## LITERATURE REVIEW

Uniforms take on many different characteristics and meanings to different people. Finding the proper uniform and establishing proper guidelines for uniform wear is actually a compromise. There is no single answer that will work for all people. It is the intent of this paper to explore as many options as possible through the review of available literature on uniform related topics. Literature review was utilized to try to determine several specific areas of interest. They are to determine what is available that will meet the requirements of *NFPA 1975 Standard for Station/Work Uniforms in the Fire Service* and to determine how much importance should be placed on total compliance with *NFPA 1975*. It is also important to evaluate the experiences others have had with various uniform ensembles and to look at issues surrounding the needs of firefighters and the perceptions of the public regarding uniform wear. It is important to note that while some of the references utilized in this document may appear to be dated, the author determined that the information is relevant and timely to the specific topics being addressed in this paper.

Our first step was to look at *NFPA 1975* and determine what is available to meet the requirements of this standard. *NFPA 1975* has been in place since 1985. “The fourth edition includes a major change whereby flame-resistant garments are no longer required exclusively, but garments are now allowed to be made either from flame-resistant fabrics or from cotton or wool fabrics” (*NFPA 1975*, 1999, p. 1975-1). A significant number of products are available that seem to comply with the requirements of *NFPA 1975*. Natural products include 100% cotton and wool. A number of altered or synthetic products are also on the market. These include but do not seem to be limited to Nomex, Indura, Firewear, Flamex, Kermel, PBI, and Proban. Each of these products is defined further in the procedure section of this paper under definitions. While Nomex



seems to be the fire resistive fabric of choice based on its reference in the literature, other products and methods do seem to come and go from the market. An article in *Fire International* titled *Flame resistant uniforms – getting it right* provides a good overview of the products that are available on the market (Hirschman, 1993). The article explores the various fabrics that were on the market at the time the article was written. The fabrics reviewed include Nomex IIIA, Firewear, Kermel, PBI, Flamex II, Valzon, and Indura. Of particular interest on the subject of topical flame retardant chemical treatments of fabrics is an article entitled *Imparting Durable Press and Flame Retardancy to Cotton Fabrics* (Beninate, 1987). This article looks at the limitations of various chemical treatments of cotton products used by the Navy. The object of the tests discussed in this article was to find a flame retardant product that would impart higher flame retardant characteristics, be durable press and add strength to cotton fabrics. What the research seems to indicate is that while improvement could be obtained in either flame retardant, durable press, or strength characteristics, it was frequently accompanied by a tradeoff in the form of a loss in another area. This article does conclude that there are acceptable flame retardant treatments available.

While reviewing *NFPA 1975* it was important to try to determine exactly how important it is to completely comply with the standard. There are many arguments that lean both ways on this topic. Issues such as safety, comfort, expense, practicality, and risk factors must all be considered and evaluated. Firefighters are placed in areas of high risk for burn injury by the nature of the job. This would seem to indicate unquestioning compliance with *NFPA 1975*. However, the argument that firefighters are provided with full turnout gear that should protect them from burn injuries also has merit. “To say that adhering to *NFPA 1975* will fully protect all firefighters, would not be a correct statement. Station/work uniforms compliant with *NFPA 1975*

are not primary protective garments and cannot be relied on to provide full protection” (Wyst, 1998, p. 1). Wyst goes on to mention that flame resistant clothing does provide a critical layer of extra protection and that in order to comply with NFPA guidelines fire resistant station wear must be worn beneath turnout gear. In a survey conducted as part of his EFO project, John Eddinger received several replies on this topic (Eddinger, 1995). Several of the respondents questioned the need for compliance, citing a lack of history of firefighter injuries which were attributed to the station uniform and the requirements for full encapsulation by bunker gear prior to entering a hazardous area (Eddinger, 1995).

Cost is another issue that must be taken into consideration. While cost factors should be of minimal concern in the realm of safety, the reality is that everyone has pockets that are only so deep and dollars must be prioritized. Of the 37 respondents to a survey made as part of John Eddinger’s (1995) EFO-ARP, 20 listed cost factors as one of the primary reasons for not purchasing fire resistive station uniforms. In an earlier survey of fire departments in the Dallas – Fort Worth metropolitan area, completed in 1992, 94% of the departments surveyed indicated that cost was a factor in not purchasing fire retardant uniforms (Richardson, 1992). It is interesting to note that the fire service is in a near lose – lose position as it relates to uniform wear. While the added cost of compliant uniforms can be a concern, the cost of not having them can be a concern also. *The Standards Crunch: A Fire Service Dilemma* has several very good and relevant comments on this topic (Coggan, 1989). The article looks at the costs associated with the various standards and regulations that affect the fire service. Coggan raises some excellent points in his article, including the issue that once a standard is created it becomes irrelevant for liability purposes if it has been adopted by a local jurisdiction or not. Coggan notes in one interpretation that a judge ruled informally that “The fact that NFPA 1500 exists and that

all parties were aware of its requirements were deemed to be pertinent factors” (Coggan, 1989, p. 46). The same would tend to hold true for any standard that is published.

The final factor that must be evaluated is the risk factor involved in wearing or not wearing compliant clothing. The issue remains that a delicate balance must still be maintained between daily operational comfort and functionality, and the safety issue of reducing the risk of burn injuries. Jessica Hirschman points out in her article *Flame resistant uniforms – getting it right* that, “Although it is true that FR garments do not offer complete and total protection, they do provide a critical layer of extra protection” (Hirschman, 1993, p. 15). This is also mentioned in an article in the *Fort Worth Star-Telegram* (Teeter, 1999, p. 18B) which comments that three firefighters who died in the line of duty received less severe burns on the portions of their bodies that were protected by cotton garments. Perhaps the best information on this subject is the result of a study on fire department uniforms under fire conditions conducted by Theodore Jarboe (1998), a graduate student at the University of Maryland. In his fire tests, Jarboe evaluated the difference between a 65% polyester – 35% cotton blend uniform shirt versus a Nomex III flame retardant shirt. Jarboe evaluated the uniform ensembles using both Kevlar/PBI and Nomex Omega three-layer protective clothing assemblies. Uniforms were placed on manikins, covered with the appropriate bunker gear, and exposed to fire conditions in excess of NFPA requirements. In the tests, the shirts were worn over a 100% cotton tee shirt. Jarboe commented that in the 20 years that the Montgomery County Fire Department has worn the polyester blend uniform shirt, “...there has not been any recorded incident where this uniform fabric contributed to a firefighter receiving second or third degree burns while worn under ... protective clothing” (Jarboe, 1998, p. 13). Jarboe’s tests indicate that regardless of the uniform shirt that is worn, the

addition of a cotton tee shirt is very important. His tests showed an increased escape time ranging from 39.7% to 80.9% with the various ensembles under fire conditions depending upon the uniform ensemble worn. The tests verified that the successive adding of layers under the turnout coat results in greater protection and an increased escape time. The test results showed limited protection with a tee shirt only, but a significant increase if either the polyester/cotton or Nomex shirt was added over the tee shirt. The test results showed very little difference in the two shirts in the areas evaluated.

Although the polyester – cotton shirt provided thermal protective results comparable to the Nomex shirt fabric when worn under the Kevlar/PBI turnout assembly and with a cotton tee shirt worn underneath, there was noticeable melting of the polyester. When the polyester/cotton shirt is worn without a tee shirt or in areas of the body where the shirt is in direct contact with the skin, the polyester component melt could adhere to the skin and possibly cause the burn injury to become more severe. (Jarboe, 1998, p. 60)

While reviewing the literature, an attempt was made to glean any available information from the articles concerning the pros and cons of various fabrics and styles. The article by Jessica Hirschman (1993) titled *Flame resistant uniforms – getting it right* and various web sites provided most of the information found on current products available to comply with *NFPA 1975*.

Nomex is discussed in Hirschman's article and in three web sites ([www.dupont.com](http://www.dupont.com); [www.aureusinternational.com](http://www.aureusinternational.com); and [www.fireclothing.com](http://www.fireclothing.com)). Nomex is identified as an inherently fire resistive and durable fiber, manufactured by DuPont. One web site ([www.fireclothing.com](http://www.fireclothing.com)) claims that Nomex will reduce burns by approximately 67% compared to untreated cotton. Nomex is available in red, royal blue, navy blue, yellow, and gray colors. The only drawbacks to

Nomex found in the literature is its lack of breathability, which causes it to be hotter than other fabrics, and its cost.

Firewear is another product that was researched. Firewear information was found in Hirschman's article and on the internet ([www.fireclothing.com](http://www.fireclothing.com)). Firewear is a modacrylic fiber blended with 45% cotton. In her article, Hirschman describes the product as having the, "benefits of comfort, high moisture absorbency and affordability" (Hirschman, 1993, p.15). The web site goes on to say that the fire resistive qualities of Firewear will not wash out. It describes the product as a breathable, soft, durable, and comfortable fabric. The web site further indicates that Firewear retains the essential comfort factors of cotton. One apparent potential drawback to Firewear is that it is currently only available in red and dark navy blue. ([www.fireclothing.com](http://www.fireclothing.com))

Kermel is a fire resistive fabric that is manufactured in Europe. The only mention of the product is in Hirschman's (1993) article. The product is described as having inherent fire resistive protection, durability and a good feel. The product is described as being more expensive than Nomex.

Polybenzimidazole (PBI) is described in Hirschman's (1993) article as a soft and comfortable product, but is also said to be the most expensive. PBI is further limited in station wear use as it can't be dyed.

Flamex II is a product manufactured by Galey and Lord. It is discussed in Ms. Hirschman's (1993) article and in an EFO paper written by John Eddinger (1995). This product is a blend of polyester and treated cotton fabric. The product is described as durable, comfortable and abrasion resistant. Eddinger reports in his paper that the fire resistive characteristics of Flamex will last through one hundred or more washing and drying cycles (Eddinger, 1995).

Indura is another compliant fabric. It is described as a 100% fire resistive cotton fabric. It is further described as comfortable, with high moisture absorbency and as inexpensive (Hirschman, 1993). The manufacturers web site describes the product as cool and comfortable with flame resistance guaranteed for the life of the garment. ([www.westexinc.com](http://www.westexinc.com))

Proban is a flame-retardant treatment that is applied to 100% cotton to render it flame retardant. Information on the internet indicates that Proban treated cotton retains all of the characteristics of 100% cotton. ([www.fireclothing.com](http://www.fireclothing.com)) One version of the product, identified as Proban/FR7A Easy Care, reportedly reduces the need for ironing and is less susceptible to shrinkage (Eddinger, 1995).

Valzon is an inherent flame retardant acrylic/cotton fabric with durable press characteristics. It is manufactured by Westex, Incorporated. ([www.westexinc.com](http://www.westexinc.com))

It is felt that other products are on the market that are compliant with the standard, but are not discussed in this paper due to a lack of available information.

The needs and perspectives of firefighters and the public were also researched through available literature. The goal was to see what firefighters and the general public had to say about uniform related topics. Eight of the departments surveyed by John Eddinger (1995) reported that they were not using fire resistive uniforms due to comfort or heat stress related concerns. Of those, three indicated they have stopped using the fire resistive uniforms due to complaints and concerns from firefighters about heat and comfort. It is also of particular importance to note that 77% of the respondents to a 1992 survey conducted in the Dallas – Fort Worth area indicated that an important reason they were not using fire resistive uniforms was that the uniforms are not comfortable (Richardson, 1992). In her article *Putting Forth the Sharper Image*, Betsy Sharp

looks at the appearance and perceptions created by uniforms (Sharp, 1991). She notes that “Worn appropriately, uniforms can connote professionalism, instill a sense of pride and confidence both in and by emergency responders, elicit trust from the people with whom the responders deal, and possibly encourage closer working relationships with hospital personnel (Sharp, 1991, p. 61).

Another good article on uniform appearance and perceptions is the article *Choosing an EMS Uniform* by Rachel Thomson (1986, p. 125). “The primary purpose of a uniform of course, is to identify the wearer,” states the article. This article goes on to discuss a study at West Virginia State College involving 509 respondents. The study was designed to determine what the public identified as a uniform for a paramedic and to determine what uniform conveys the highest level of paramedic training to the public. The study reports that the uniform of choice was one consisting of dark navy blue trousers and a light blue short sleeve work shirt made from a woven fabric. The study also indicated that patches on the sleeves of the uniform and a nametag were important to the survey group (Thomson, 1986).

The selection of a proper uniform is a very complex one. A good outline and discussion on uniform selection is provided in *You Are What You Wear* (Stevenson, 1994). The clothing system must identify the provider, protect him from the elements and scene hazards, present a positive image to the public and patient, help the employee perform his job, be comfortable, and be cost effective. The article suggests that the first step in evaluating a uniform system is to define your role. “One trap to avoid is defining your role in terms of what you do rarely. At some point you must decide what an acceptable risk is – always a tough decision” (Stevenson, 1994, p. 28). The article points out the importance of appearance and goes on to say that, “Your appearance is the most frequent source of contact that you will have with the public ... and the

government officials who make a difference at budget time” (Stevenson, 1994, p. 29). The article goes on to point out that, “A key role of the uniform system is to protect the caregiver from the wide range of environments they will be faced with” (Stevenson, 1994, p. 29), while acknowledging that it is nearly impossible to protect personnel from every imaginable threat. Other points to consider in uniform design and selection are visibility of the employee, environmental protection, comfort, utility, and cost. One good piece of advice that came from the utility section of the article is a reminder that pockets will be used. It is pointed out that pockets are an essential part of an EMS uniform, including fire based EMS.

The importance of dressing for the part was discussed in two separate articles. The first of these is *Choosing an EMS Uniform* (Thomson, 1986). The second is *Package isn't the product, but it counts* (Coleman, 1995). In the review of Thomson's article, many parallels were found between her research and discussion of EMS uniforms and issues involved in fire service uniform selection. She states, “The primary purpose of a uniform is to identify the wearer” ( p. 125). Ms. Thompson discusses a study which, “...indicates that the closer a person is dressed as expected, the higher we will feel his level of proficiency at his job. There is also evidence to suggest that if a person is not dressed to meet the expectations of his public, he may encounter negative reactions” (Thomson, 1986, p. 125). This article also cites the study involving 509 respondents conducted by West Virginia State College as mentioned earlier in this paper.

In his article *Package isn't the product, but it counts*, Ronny Coleman looks at the messages conveyed by uniforms and discusses the subject very well. “The issue is the packaging of a person for the job they are trying to do. The package is not the product... but... the lack of



uniformity often creates obstacles that are virtually impossible to overcome” (Coleman, 1995, p. 36). Coleman discusses the importance of a proper uniform. He discusses the importance of a uniform from the standpoints of establishing our identity, esprit de corps and as a means of staying connected with the legacies and traditions that make up the fire service. Coleman points out the importance of uniforms to the military and to law enforcement as a means of establishing identity for the group and to the public. As Coleman points out, if identity is not important, then why are there thousands of shoulder patches and badges in use today? He further points out that, “The decision regarding uniform design is not one that should be taken lightly” (Coleman, 1995, p. 38). Coleman’s article suggests taking several steps in determining what uniform should be worn. He suggests looking at the image the department wants to convey and the circumstances uniforms are to be worn under. He then recommends we look at the cost and comfort of the uniform and determine if there is general support for the uniform style in the context of command presence and defining the spirit of the organization (Coleman, 1995).

## **PROCEDURES**

### **Definition of Terms**

**Firewear.** Firewear is a cotton blend fabric, which uses a blend of 55% Fibrous Flame-Retardant (FFR) fibers and 45% cotton. The FFR fibers emit a non-combustible gas through pores in the fabric when exposed to flames. Springs Protective Fabrics manufacture this product.

**Flamex.** Flamex is a 50% cotton and 50% Dacron polyester fabric that is treated to self extinguish. The products fire resistance is designed to last for 100 wash cycles.

**Indura.** This is the trade name for a 75% cotton/25% nylon warp, with a 100% cotton fill, fire resistive fabric from Westex, Inc.

**Kermel.** This product is an inherently fire resistive fabric that was originally developed for use by the French military. It is reported to have a very comfortable feel. Kermel is sold as a 50/50 blend of Kermel fiber and FR viscose rayon. Kermel doesn't degrade with laundering, and is resistant to most acids.

**Nomex.** Nomex is one of the oldest inherent fire resistive fabrics in use. It is available in several styles, including Nomex III, Nomex IIIA, and Nomex Plus. Dupont manufactures Nomex.

**PBI.** Polybenzimidazole is a fire resistive fabric used in bunker gear. The fabric is soft and comfortable but currently has limited applications in station wear as it is expensive and is only available in one color.

**Proban.** Proban is a fire resistive cotton fabric manufactured by Westex, Inc. The product is created by treating the cotton with ammonia gas. Proban is only certified as flame resistant for twenty five washings and the manufacturer recommends replacement at that time.

**Valzon.** Valzon is an inherently fire resistive product containing sixty percent FR acrylic and forty percent cotton. The fabric is soft, fade resistant, comfortable, and durable. Valzon is manufactured by Westex, Incorporated.

### **Assumptions and Limitations**

It is assumed that the research referenced in the Literature Review section of this paper was conducted properly and without bias. No specific attempt was made to verify any of the information included, although in many cases information was verified through additional reference sources used.

Limitations encountered in this project included the large number of issues surrounding what appears to be a simple question of what uniform should be used. Other limitations were

difficulty in finding people willing to complete the citizen questionnaires, a lack of available and adequate information on many of the fire resistive products available today and difficulty in obtaining information from the fabric industry. A full function test of various fabrics would have been desirable for this paper, but could not be conducted in the time allotted for this project.

Establishing an appropriate uniform for station wear quickly turned into a problem with much larger implications. Everyone seems to have an opinion on what should or should not be worn. Cost factors, availability of products, limitations on colors, the functioning of the uniform, appearance, and other issues quickly came to the forefront in the discussions and research. Each of these had to be addressed in order for a decision to be made concerning the fabrics to be tested.

Limitations on the questionnaires included a limited sampling of opinions that could be obtained and a general aversion that the general public seems to have in our area for completing surveys.

One of the biggest limitations encountered was a lack of information on many of the fire resistive products on the market today. Research included a literature review, a search of the internet by product type, product name, manufacturers name and general information, such as fire resistive clothing and uniforms. Information was very sparse on some of the products. Requests made through uniform sales people and information requests to manufacturers by e-mail resulted in minimal responses.

Perhaps the biggest limitation encountered was a realization that there is not a perfect uniform or a correct answer to the question of what uniform should be worn. It is impossible to come up with an answer that everyone will agree with and feel good about.

## **Research Methodology**

The research method used in this paper was descriptive research. It was found in the initial research that a number of issues would need to be evaluated to find a reasonable answer to the question of appropriate uniform wear for our department. While most of the research was conducted through literature review, it was necessary to conduct some personal interviews, use survey results from other EFO papers, and conduct surveys of my own of citizens, firefighters, and other departments. Sample selection criteria used in the surveys were as follows. The citizen surveys were conducted at random by fire prevention personnel during fire inspections, through co-workers of friends and relatives, and through a high school senior government class. Firefighter surveys were given to every member of our organization who were on duty over a three-day period. Surveys of other departments were provided to twenty-five departments in the Fort Worth – Dallas metropolitan area who were listed in the Fort Worth or Dallas telephone directory. All but one returned the survey instrument.

## **RESULTS**

### **Answers to Research Questions**

#### **Research Question 1.**

Surveys indicate that almost every conceivable uniform style is in use in the metroplex. Respondents reported the use of tee shirts, golf shirts, jump suits, Dickies work uniforms, blue jeans and traditional uniform shirts. These uniforms are in use in a variety of fabrics, with cotton/polyester blends and 100% cotton tee shirts as the most widely used fabrics. A few departments are using Nomex, but no other flame-retardant product was mentioned in the surveys that were returned.

#### **Research Question 2.**

Several products are available to comply with the provisions of *NFPA 1975*. These include 100% cotton, various treated fire resistive cotton products such as Flamex, Indura, and Proban, and various inherently fire resistive fabrics or blends such as PBI, Nomex, Firewear, Valzon, and Kermel.

### Research Question 3.

It was found that the fire service in our area is generally not in compliance with the provisions of *NFPA 1975*. A survey of area departments found that only 4 of the twenty-four departments surveyed are in compliance with *NFPA 1975*. It was of particular interest to note that a survey conducted in 1992 as part of an applied research project involving metroplex fire departments showed surprisingly similar results. Of the thirty-five departments surveyed in the 1992 project, only 4 were in compliance with the standard (Richardson, 1992). A shift in the reasons given for not being in compliance was found to have changed between the 1992 survey and the one conducted for this paper in 1999. The 1992 survey indicated that the three leading reasons for non-compliance were the expense (94%), uncomfortable (77%), and unavailable colors (46%). The 1999 survey indicated that expense concerns still topped the list at seventy percent, while concerns about comfort and an unproven need to meet the standard were both at forty one percent.

### Research Question 4.

Firefighters, management, and the public all seem to have slightly different perspectives on uniforms. Management is placed in a position of looking at the big picture of cost, availability, functionality, and public perception. The fire service manager is also placed in the role of risk manager in trying to insure that the uniforms are reasonably safe for the firefighter and are also comfortable enough to work in during extremes in temperatures.

Firefighters in our organization indicated that it is generally very important for them to portray a professional image to the public. When they were asked how important it was for our organization to completely comply with the requirements of *NFPA 1975*, the answers were surprising. Only 12% of our line firefighters ranked this as an item of high importance. Twenty percent ranked it as an item of extremely low importance while the remainder fell in between. A notable item is that there is not a consensus among the line firefighters as to what they would like to have in a uniform. In reviewing the comments on the surveys and talking with members of our department, the desired options range from year round long sleeve Nomex shirts and trousers to shorts and tee shirts and everything imaginable in between. When asked what features were important to them in a uniform, the top three answers were comfort at 100%, durability at 92%, and a professional appearance at 75%.

Citizen survey results indicate that the average citizen is very interested in the way we are packaged to do our jobs. Our survey indicated that 87% of the respondents felt that firefighters should be in a traditional uniform consisting of a light blue button up uniform shirt and trousers. Forty seven percent of the respondents indicated that they were left with a negative impression by one of the uniforms used in our survey. Specifically, 25% expressed distaste over a uniform tee shirt, while 36% expressed distaste for the golf style uniform shirt. Typical comments were that the golf shirt and tee shirt looks unprofessional and sloppy. The citizens surveyed indicated that it is very important to them that the uniform be easily identified as a uniform, that it has patches, and that it has a badge. Seventy two percent of the citizens surveyed indicated that the appearance of a firefighter is important to them even under emergency conditions. Sixty percent of the respondents felt it was acceptable for firefighters to wear tee shirts during the summer months, while 48% percent felt it was acceptable for firefighters to wear golf style shirts. It was

important to note that 70% of the respondents felt it was not appropriate for firefighters to respond to emergency calls wearing workout clothing.

## **DISCUSSION**

Uniforms are an important part of the fire service. They can identify us, protect us, and help us to do our jobs. “Worn appropriately, uniforms can connote professionalism, instill a sense of pride and confidence both in and by emergency responders, elicit trust from the people with whom the responders deal, and possibly encourage closer working relationships with hospital personnel” (Sharp, 1991, p. 61).

In my career, the Mansfield Fire Department has used traditional button up uniforms, Dickies work style uniforms, jump suits, tee shirts, sweatshirts, a variety of cap requirements, and so forth. Each has met with resistance and many changes have occurred. Our uniforms currently take on a hodgepodge appearance. Dress blue shirts, tee shirts, sweatshirts, slacks, EMS pants, and optional baseball caps are all presently available. Members of the employee organization are asking for different options including shorts, golf shirts, polo style shirts, jumpsuits, and blue jeans in a variety of fabrics ranging from 100% cotton through polyester blends to Nomex.

It was hoped that an immediate and obvious solution would surface to find an appropriate uniform for the members of the Mansfield Fire Department. In the search for an appropriate uniform, many things had to be considered. Among them were the needs of the firefighters, who will be wearing the uniforms and the needs of the public, who ultimately will purchase the uniforms. Along the way, the provisions of *NFPA 1975* must be reviewed and considered, as

well as the benefits and drawbacks of the various fabrics on the market. “At some point you must decide what an acceptable risk is, always a tough decision” (Stevenson, 1994, p. 28).

Regardless of the uniform that is selected, it is very important that the uniform convey a image of professionalism. This is important to the public and to the individual firefighter. This is alluded to in several of the articles reviewed for this document. “Fully uniformed personnel ... have a calming effect on disaster or accident victims” (Sharp, 1991, p. 61). Uniforms are important for several reasons. One complaint I heard from several firefighters working at departments where golf shirts were worn was that they didn’t like the way the uniforms made them feel personally. They used terms like sloppy, unprofessional, and indistinct when describing the uniforms they wore. I heard similar comments from citizens. Comments that they want to be able to instantly identify firefighters at an emergency scene so they know who’s there to help. The fire service is a professional organization and is defined in part by the uniform we wear. “Uniforms center around the issue of packaging a person for the job they are trying to do” (Wyst, 1998, p.4).

A decision on uniforms must include a rational analysis of safety concerns, comfort, appearance, durability, cost, and the ability of the uniform to help us perform our jobs. All of these issues must be balanced with appropriate policies on uniform wear.

Safety concerns are a very big issue in uniform wear. This is evidenced by the presence of *NFPA 1975*. Firefighters work in a high-risk environment where exposure to heat and flames are a possibility at any given time. Bunker gear and wild land coveralls provide an excellent first line of defense against burn injuries for firefighters. While this should close the discussion on uniforms, it really doesn’t because a good risk manager must look at the big picture. Unforeseen situations frequently occur at locations where firefighters are called to operate. Personnel are



exposed to flashovers, flash fires at motor vehicle accidents, and other unforeseen situations. Right or wrong, we have all observed the apparatus operator leave the pump panel to set a fan or pull loose a section of hose in very close proximity to a burning structure while wearing no bunker gear. We have all witnessed crews operating at grass fires wearing only bunker pants and helmets. We have all witnessed personnel standing in spilled gasoline and oil during motor vehicle collisions. It's not right, but it is reality! Even if bunker gear is worn properly, a flashover, an upset thermal balance, a sudden ignition of an unseen flammable liquid in close proximity, or any one of dozens of other problems could result in a compromise of the bunker gear that is worn. For all of these reasons, it is important that we make every reasonable effort to insure our uniforms are safe to wear. The study by Jarboe (1998) was of particular interest in this project. Jarboe's studies are the only fire tests I found that have been conducted on various uniform ensembles under fire conditions by an independent researcher. It was interesting to note that the use of a 100% cotton tee shirt worn under a cotton-polyester blend shirt provided nearly the same level of protection to the wearer as did a 100% cotton tee shirt worn under a Nomex shirt in his tests. His research dispelled the myth that a 100% cotton tee shirt alone is effective. It wasn't nearly as effective as a cotton tee worn under another uniform shirt. The layer effect created by the tee shirt and an over shirt was lost when only the tee shirt was worn. It must be noted that these tests were conducted with the uniform ensemble worn underneath a bunker coat and are not indicative of the results that might have occurred with no bunker gear worn. One significant problem with the Mansfield Fire Department uniform is that the tee shirts we wear are a 50/50-cotton/polyester blend. Safety concerns would dictate that we go to a 100 % cotton tee shirt for an under garment and build our uniform on that. The importance of the cotton garments are mentioned in an article concerning the deaths of three firefighters in the *Fort Worth Star-*

*Telegram* which stated that, “The report showed that protective garments worked well and that cotton clothing under bunker gear proved protective...” (Teeter, 1999, p. 18B).

The comfort level of any uniform ensemble is an important consideration. The term comfort must be viewed from two perspectives. Are we discussing comfort in the feel of the uniform fabric, or comfort in the actual wear of the uniform. Nomex, for example, is available only as a dark colored garment that does not breathe well. This results in increased heat retention, increased heat stress, and a reduction in the level of comfort for personnel wearing the uniform. It was noted that many of the fire resistive fabrics on the market are dark in color, which will make them hot to wear in our area during the summer months. Here is an example of where the risk management decision has to be made. Do the fire resistive benefits of a particular garment outweigh the heat stress concerns created by the fabric? “Typically one of the hardest design specifications in a uniform system is all season comfort. {You} must ... determine what is acceptable and cost effective” (Stevenson, 1994, p. 30).

There are many different uniform styles available to the fire service. These include traditional button up style shirts, golf shirts, tee shirts, and other similar styles of uniforms. There seems to be a trend in the fire service in our area to move away from the traditional button up style of uniform. The reasons most frequently given are a desire to move to a softer style of uniform and to have a uniform that does not resemble a police uniform. “The primary purpose of a uniform of course, is to identify the wearer... and establish why he is there” (Thomson, 1986, p. 125). These reasons for moving away from an identifiable uniform have a couple of fallacies built in. In the first place, by going to a softer style of uniform, we lose the benefit of having a uniform. The primary purpose of a uniform is to provide immediate recognition and identification. If we are using the same style logo shirt that is worn by most fast food, retail, and

service organizations, how are we going to be recognized when the need arises? “A uniform which is clearly identified by the patient and bystanders ... can shorten or eliminate introduction time... {and} help the paramedic enter the scene more quickly while having a reassuring effect on the patient” (Thomson, 1986, p. 125). I have personally attended classes with people from other departments and in the entire time I was with them was totally unable to read the embroidery to determine where they were from. I have talked with firefighters and chief officers from departments who are using golf style shirts and have been told stories of them being mistaken for food clerks, not being recognized at emergency scenes, and so on. I would pass on the wisdom of a mother who commented that she tries to teach her children who is safe to go to if something happens, and commented that a traditional uniform is a necessity to accomplish this with a small child. I’ll pass on the comments from a friend who works with the handicapped who talked about the dogs that are trained to assist the impaired. She stated that a problem they have encountered is that the dogs are trained to be protective of the owner, but are trained to lay down out of the way in the presence of a person in a uniform with a badge. She indicated she was aware of problems where EMT’s in non-traditional uniforms had arrived at emergency scenes, but were unable to get past the dog until a firefighter or police officer in uniform arrived. Upon the arrival of a person in a uniform and badge, the dog would lay down out of the way like it is trained to do. On the issue of not being mistaken for a police officer, a surprise awaits us there also. In our area, some of the police agencies have gone to a soft uniform with only an embroidered or silk-screened badge or logo on a tee shirt or golf shirt for summer wear. This would seem to actually increase the chances of a firefighter in a golf shirt or tee shirt being mistaken for a police officer.

My interpretation of this information is that the fire service needs to move very slowly in our apparent trend to move away from traditional style uniforms. With the proliferation of golf style shirts in society today, we run the risk of losing our identity. I heard from a number of firefighters and chief officers who expressed frustration over not being recognized as fire service personnel. One battalion chief stated that he hates to go to the grocery store any more, because every time he does he gets mistaken for a store employee in his golf style shirt. The public expects us to be dressed in a certain way. Parents teach their children how to identify us, service dogs are trained to identify us, and the general public expects to see us in a certain way. The voices in the fire service that express concerns over comfort and concerns about being mistaken for peace officers have merit and must be addressed. Comfort can be addressed through the use of several fire resistive uniforms that are on the market and through a sensible uniform wear policy which balances the needs of the firefighter against the hazards imposed by fire conditions and environmental heat considerations. The issue of being mistaken for peace officers can be addressed through the use of uniform colors that are sufficiently different from police uniforms. In our area, for example, no police agency wears a light blue uniform shirt. Several do wear tee shirts during the summer and various monogrammed golf shirts at different times of the year. Fire service leadership needs to continue working towards making every effort to insure that the safety and comfort needs of the firefighters are met, along with the expectations of the public. The challenge is to balance these components within the funds available in the budget.

## RECOMMENDATIONS

The fabric industry still has some work to do to provide a variety of comfortable, durable, color fast, and permanent press fabrics in a wide range of colors that will meet the provisions of *NFPA 1975*. Until that happens, the fire service leadership is put in a difficult position of having to balance a variety of benefits and drawbacks as it relates to uniform choices. It is recognized that the fabric industry is dynamic in nature and that there is a very real possibility that new fabrics or improved versions of existing fabrics may be on the market before this paper is completed.

The recommendations for the Mansfield Fire Department are not a perfect solution, but are rather a compromise between the various needs as outlined throughout this paper. It is recognized that there are many statements within this paper that are subject to debate.

The Mansfield Fire Department does need to make some changes to its uniform. It is recommended that the existing gray tee shirts be changed to 100 % cotton tee shirts to provide better protection of the upper torso. It is recommended that an outer uniform shirt be worn. Field testing of several products, including 100% cotton, Indura, Flamex II, Valzon, and Firewear uniforms, as well as Nomex pants, need to be conducted prior to a final decision being made. It is the intent of the Mansfield Fire Department to make every possible effort to find a fire resistive uniform shirt and pants ensemble. Research has shown that a layered system is the best means of protection from thermal injuries. By sticking with a traditional uniform style, several benefits will be realized. First, the uniforms will present a professional appearance. Some will argue that the traditional uniform looks too much like a police uniform. In our area, I have not found that to be the case. Most police agencies in our area are wearing dark navy blue uniforms, tee shirts with silk screen information or golf style shirts. By staying with our current color

scheme of a gray tee shirt, light navy blue shirt, and dark navy blue pants we are staying out of the uniform styles and colors being favored by the police agencies. Second, we will maintain our identity as a professional fire service organization. Our uniform will help define who we are. Firefighters will not be mistaken for the stocker in the grocery store or a bystander on an emergency scene. This is particularly important in major incidents, where rescuers from several agencies may find themselves at the same scene and possibly mixed in among bystanders. Third, the traditional uniform is a utility uniform. It has pockets for pens, note pads, and other tools of the trade. On a final note, the safety consideration of a fire resistive uniform shirt worn over a 100% cotton tee shirt is something that can not be ignored. Until a proper ensemble is found, the protective benefits of a cotton/polyester shirt worn over a cotton tee shirt as researched by Jarboe (1998) can be utilized.

The following recommendations and actions are the specific result of this project. First, an administrative policy for uniform wear was developed and is included in the appendix section of this document. Second, a recommendation was made that we begin a transition to 100% percent cotton tee shirts. Third, an evaluation is being arranged to field test several different flame-retardant uniform components for possible changes in our uniforms.

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## APPENDIX A

### FIREFIGHTER SURVEY RESPONSES\*

\*There were twenty-four responses received from Mansfield firefighters.

- 1) Do you feel the Mansfield Fire Department should comply with the provisions of NFPA 1975 *Standard on Station/Work Uniforms*? Yes: 10 No: 6 Unsure: 8
- 2) Are you familiar with the requirements of NFPA 1975? Yes: 17 No: 7
- 3) Would you like to see changes in the present uniform policy? Yes: 16 No: 8
- 4) If yes to #3, then what changes would you like to see? (See comments at end of this document.)
- 5) What features are important to you in a uniform? (Number reflects affirmative answers.)

|                      |                              |
|----------------------|------------------------------|
| Durability - 22      | Immediate recognition - 15   |
| Flame retardant - 11 | Professional appearance - 18 |
| Comfortable - 24     | Fade resistant - 14          |
| Pockets - 15         | Patches - 8                  |
| Badge - 8            | Name Tag - 7                 |
| Other - 3            |                              |
- 6) On a scale of 1 to 10, with 10 being extremely important and 1 being totally unimportant, Please answer the following questions.
  - a) How important is it for firefighters to portray a professional image to the public?  
Four respondents answered with an eight. Twenty respondents answered with a ten.
  - b) How important is it for the fire service to fully comply with the requirements of

NFPA 1975, *Standard on Station/Work Uniforms?*

Three respondents answered with a one. Two respondents answered with a three.

Five respondents answered with a five. Two respondents answered with a six.

Three respondents answered with a seven. Six respondents answered with an eight. One respondent answered with a nine. Two respondents answered with a ten.

**Comments:** (Comments are transcribed verbatim.)

“Mandatory EMS pants and mandatory blue shirts from 8-5.”

“More comfort and function. I believe the person in the uniform can make it professional no matter what it may be. We’ve all known someone who looks different than anyone else in the same uniform. The uniform in my opinion needs to be recognizable as the F. D. unique from other departments. The most appropriate way to win a professional reputation is through our actions and mannerisms. If a professional appearance is the concern of the department’s efforts should be focused on attitudes and mannerisms toward the customer. I don’t think a uniform will accomplish the task of portraying a professional image. I believe neatness and public interactions with tact and mannerisms will.”

“Keep policy the same. Dress blues in planned events ONLY! NOT on calls unless you already have it on. Our gray T-shirts are comfortable and not hot in the summer. The public doesn’t care if we portray a professional image when they call 9-1-1. Volunteer firefighters should be required to adhere to the same policy as we do. They should not be wearing T-shirts and radios unless they are on duty. I have witnessed volunteer personnel wearing radios and T-shirts with

jeans and tennis shoes in public and telling the public they are firefighters, not volunteers.

Volunteer firefighters should have a different uniform and should say volunteer firefighter.”

“I would like to see a more practical approach to a work uniform. Badges, name tags, collar brass are unnecessary on a work uniform. T-shirts are fine around the station, while a polo/golf style shirt with embroidery would be stylish and professional looking for other functions – public, planned outings to store, etc... EMS style pants are more versatile for every day work as they provide more options and are more rugged than the pleated style pants. Clothes should be flame retardant – more than a 50-50 blend, but 100% cotton (unless denim) would be a nightmare to maintain. Another option to EMS style pants would be denim jeans. Very rugged, can be kept good looking for long periods of time by care at cleaners, are inexpensive and are constantly available almost anywhere. I feel we go way overboard on worrying about how the public perceives us. As a whole, a vast majority of the public could not tell you what we wear from day to day and normally could care less, especially during an emergency. Additional uniform options could include shorts during warm weather and a jumpsuit or flight suit for quick response at night. Also, optional sweatshirts for cooler weather. Embroidery can be used instead of badge and nametag for work uniforms. No patches on polo shirts!”

“More and more department’s are wearing Polo type shirts for station wear. This is a little classier look than traditional light blue. Also would like to see station shorts. I think they would be appropriate during the summer. You still have bunkers you can put on.”

“I don’t see anything wrong with the present uniforms. Maybe just a little flexibility in what we wear as work uniforms, whether just T-shirts or golf shirts.”

“Develop an everyday station uniform without brass. (i.e.- golf shirts, duty shirts)”

“I feel we should go to Nomex duty uniforms. Nomex outerwear with a long sleeve shirt and boots can be worn as wild land gear. Also, it would offer a little more protection under our structural gear.”

“Would like to see a golf style shirt or a button up with embroidery instead of badges and tags.”

“I would like to see our rank on our name badge.”

“I think the current policy is O.K.”

“I would like to see an 8-5 uniform with dress down tees after 5.”

“We need to be in a more practical work uniform. The badge and brass has no place on a work uniform. Golf style shirts with the needed monogram work and department name on the back should be allowed at all functions that suppression personnel are required to perform. I would also like to see a full dress uniform for all. We should be able to dress proud when the function calls for it.”

“I would like to see clothing that is 100 % cotton. Hospitals still require that patients wear 100 % cotton clothing into O.R. suites simply because of the small risk of fire. When your job description requires that you expose yourself to fire, why settle for anything less. To stand back and look at someone who has been burned through their turnout gear and say they got too close or got too hot does nothing to help the situation at hand or after the fact.”

“No brass.”

“Class A uniforms should not be a primary uniform in my humble opinion.”

“I would like to consider flame retardant uniforms. While this may seem like overkill, it might mean the difference between being injured and killed.”

“More comfortable utility type uniform.”

**APPENDIX B**

**UNIFORM PHOTOGRAPHS TO ACCOMPANY**

**SURVEY RESULTS**

## APPENDIX B

### CITIZEN SURVEY RESULTS

This document contains the results of a survey of thirty-eight citizens who were selected at random. The respondents were asked several questions designed to obtain their opinions concerning uniforms in the fire service. The answers are contained herein.

1) What is your age group?

| Under 20 | 20-30 | 31-40 | 41-50 | 51+ |
|----------|-------|-------|-------|-----|
| 11       | 11    | 10    | 5     | 1   |

2) Do you have a college degree? Yes – 16 No – 22

3) Please indicate the uniform(s) you most readily associate with a firefighter/paramedic.

Please mark all that apply. Please see appendix B for uniform description.

| A | B | C | D  | E  | F  |
|---|---|---|----|----|----|
| 7 | 2 | 3 | 31 | 31 | 12 |

4) Please indicate which uniform(s) you feel are appropriate for firefighter/paramedics.

Please mark all that apply.

| A  | B | C  | D  | E  | F  |
|----|---|----|----|----|----|
| 11 | 9 | 13 | 33 | 27 | 13 |

5) Indicate the uniform you feel portrays a professional image. Mark all that apply.

| A | B | C | D  | E  | F |
|---|---|---|----|----|---|
| 6 | 0 | 0 | 35 | 22 | 1 |

6) Which of the uniforms shown do you feel indicates the highest level of medical training?

| A | B | C | D  | E | F |
|---|---|---|----|---|---|
| 0 | 0 | 0 | 27 | 7 | 2 |

7) Do any of these uniforms leave a negative impression in your mind? Yes – 17.

8) If you answered yes to # 7, please indicate which uniform and why. (Note that comments follow the chart.)

| A | B | C | D | E | F |
|---|---|---|---|---|---|
| 5 | 8 | 5 | 1 | 0 | 9 |

Comments:

Style A: “Janitor look.” “Just does.” “Looks like a mechanic (4 comments to this effect).”

Style B: “Can’t tell who they are.” “Too sloppy looking for an authority figure.” “Looks Like he should be golfing or something.” “Too casual for on duty firefighter.” “They don’t look like firemen.” “It does not look professional.” “It looks off duty!”

Style C: (comments were repeated for B and C.)

Style D: No comments received.

Style E: No comments received.

Style F: “Not professional.” “You could pick it up at a garage sale.” “It’s just a plain tee-shirt.

Anyone could impersonate this shirt.” “Too sloppy looking for an authority figure.”

“Looks tacky.” “Looks too casual, like he came from a ball game.” “They don’t look like firemen.” “It looks so unprofessional.” “Not professional.”

- 9) What features do you feel are important on a firefighter/paramedic uniform? Please rank the following items on a scale of 1-5, with 1 being not important and 5 being very important.

| Feature                       | 1 | 2 | 3  | 4  | 5  |
|-------------------------------|---|---|----|----|----|
| Easily identified as uniform. | 1 | 0 | 7  | 5  | 24 |
| Fire service patch.           | 0 | 2 | 3  | 10 | 24 |
| Medical patch.                | 0 | 2 | 3  | 11 | 22 |
| Name tag.                     | 3 | 9 | 7  | 5  | 12 |
| Rank displayed.               | 9 | 6 | 11 | 5  | 5  |
| Badge.                        | 4 | 3 | 6  | 7  | 17 |
| Style.                        | 3 | 9 | 13 | 4  | 6  |

- 10) Is the appearance of a firefighter/paramedic that is in your home to provide emergency care to you or a family member important to you? Yes – 23 No – 9

- 11) Do you feel it is appropriate for firefighter/paramedics to wear uniform tee shirts during the summer months? Yes – 15 No – 10 No opinion – 7



12) Do you feel it is appropriate for firefighter/paramedics to respond to emergency calls wearing workout clothing such as a tee shirt and shorts? Yes – 7 No – 16

Comments: (The comments are transcribed verbatim.)

“Public needs confidence in team. Unfortunately, appearance and perception are tied together. The more professional look will get more respect.”

“I feel that firemen and paramedics should look very official so we can train our children to know who is a safe helper to them.”

“Polo or tee-shirts would be appropriate for department picnics and parties, but when responding to calls they need to be professionally dressed as is necessary and appropriate.”

“I do think that a neat “appropriate” uniform is important. If a person looks professional, I have more confidence in him/her treating or helping me. If they take pride in their appearance, hopefully they will take pride in their work.”

“You should look professional at all times. Tee shirts and golf shirts should only be worn at casual events.”

“As long as they get the job done, I do not care what they wear.”

“I think the most important thing is that they do their job and act professional.”

\* For clarification purposes, should the photographs that accompany this document become separated from the document, the following are descriptions of uniform styles A through E.

Style A – This is a short sleeve, dark navy blue, Nomex button up shirt. The uniform contains shoulder patches and has the name and rank embroidered in white above the pockets.

Style B – This is a white pullover golf shirt with red and blue collar and sleeve trim. The shirt has no patches or badge. The department name and individuals name is embroidered in red on the uniform front.

Style C – This is a navy blue pullover golf shirt. The department name and individuals name is embroidered in gold on the front of the shirt.

Style D – This is a traditional button up uniform shirt, white in color. The uniform contains patches on the sleeves, a badge, and a nametag.

Style E – This shirt is identical to style D except it is light blue in color.

Style F – This is a gray tee shirt with a large maltese cross and the department name silk-screened on the left upper portion of the shirt.

**APPENDIX C**  
**AREA FIRE DEPARTMENT**  
**SURVEY SUMMARY**

The following are the results of survey questions and comments received from a questionnaire sent to various fire departments in the Fort Worth – Dallas metropolitan area.

- 1) The respondents included twenty-four communities representing a population ranging from 2600 to 504,350.
- 2) The respondents were eighteen paid departments and six combination departments.
- 3) All twenty-four departments provide emergency medical services.
- 4) Of the twenty-four departments, six provide MICU service, twelve provide ALS service, and one provides BLS service. The remaining five provide first responder services.
- 5) Four of the respondents do comply with the provisions of *NFPA 1975*. One reports partial compliance, while the remaining nineteen report non-compliance.
- 6) Of the five respondents reporting compliance or partial compliance with *NFPA 1975*, two report they are using Nomex station wear, one reports they are using 100 % cotton station wear, and the remaining two report they are using a combination of Nomex and cotton.
- 7) The five respondents reporting compliance with *NFPA 1975* have been in compliance for eleven years, ten years, nine years, one year and six months respectively.
- 8) The following reasons were given by respondents to indicate why they were not utilizing fire retardant uniforms. The respondents were instructed to indicate all of the reasons that applied in their case.

Expense - 17

Unavailable colors – 3

Uncomfortable – 10

Poor wearability – 8

Unavailability – 1

Poor quality – 1

Unproven need – 10

Other – 3

- 9) Respondents were then asked to select the primary reason they were not utilizing fire retardant uniforms. Fourteen cited expense considerations, two cited comfort, two cited wearability, one cited unavailability of the product, and one cited an unproven need.
- 10) Respondents were asked to describe their current uniform. Due to the wide range of responses received, readers are asked to go to the comment section of this survey.
- 11) Twenty-two of the respondents like their current uniform style, while two do not.
- 12) Ten respondents answered that they feel their current uniform provides adequate protection to firefighters, while five do not. The remaining nine respondents did not answer the question.
- 13) Thirteen respondents answered that they believe their current uniform portrays a professional image, while two do not. The remaining nine respondents did not answer the question.

### **Comments:**

The following are the specific answers and comments received from the questionnaire and are written as they are found on the survey forms. The replies are listed verbatim, without any corrections. The original question is located with each comment line whenever comments were received. It should also be noted that each specific survey was assigned a lower case letter, which is enclosed in brackets and used as a prefix (i.e. {a}) in sections eight and beyond to allow

readers to track comments related to each specific survey returned. Each survey was assigned a letter from {a} to {x} for tracking purposes.

1) What is the population of the area you serve?

2600; 8150; 10,000; 13,000; 18,100; 20,000; 23,500; 25,000; 26,000; 27,000; 28,000;  
30,000; 36,600; 37,000; 49,000; 49,500; 55,000; 100,000; 115,000; 125,000; 232,000;  
301,000; 504,350.

2) No comments.

3) No comments.

4) No comments

5) No comments.

6) If you are complying with *NFPA 1975*, what fabrics are you using?

“Nomex Work Rite brand.” “Nomex.” “Cotton.” “Nomex, cotton.” “Nomex pants and 100% cotton shirt.”

7) No comments.

8) No comments.

9) No comments.

10) Please describe your current station uniform.

“{a} 50/50 cotton/poly golf shirt and 50/50 EMS trousers.”

“{b} Shirt – red 100% cotton polo shirt with embroidered name. Pants – 65%/35%

Dacron/cotton blend black slacks.”

“{c} We buy off City of Arlington contract. {Nomex}.”

“{d} Blue polyester-cotton blend dress shirt with dark blue trousers. 100% cotton T-shirts.”

“{e} Navy shirt and slacks. Nomex III.”

“{f} FR cotton short sleeve shirt – golf style and FR cotton pants.”

“{g} 100% cotton jeans and 100% cotton sport shirt.”

“{h} Navy blue pants, polo/golf shirt, mid rise uniform boots, black belt.”

“{I} Flying Cross shirts and Dickies pants. 100% cotton golf shirts and shorts in the summer.”

“{j} T-shirts. 65-35 polyester/cotton pants and shirts.”

“{k} 100% cotton polo style shirts. 100% cotton Wrangler jeans.”

“{l} Cotton T-shirt with Nomex shirt and pants.”

“{m} Dickies pants, Elbeco shirts and 50/50 golf shirts.”

“{n} Dickie work shirt with monogram. Dickie work pants and T-shirts.”

“{o} Cotton/poly golf shirt and EMS pants.”

“{p} Golf shirt with EMS pants.”

“{q} 100% cotton short sleeve polo shirt, gray. Nomex pants, navy.”

“{r} Golf shirt and EMS style pants.”

“{s} Traditional materials.”

“{t} Navy blue poly/cotton work pants with lighter blue poly/cotton shirt.”

“{u} Class B – Poly blend pant and wool/cotton blend dress shirt. Navy blue in color. Class C – Black cotton pants and black cotton collared golf shirt.”

“{v} Dress shirt 65/35 poly/cotton blend. Tee shirt – 100% cotton or 50/50-poly/cotton blend. Pants are 100% poly or 65/35 poly/Dacron pants.”

“{w} Cotton golf shirt and blend trousers.”

“{x} Cotton, polyester blend. Polo shirts.”

11) Do you like your current uniform style? Why or why not?

“{a} Comfort. Well received by public and firefighters.”

“{b} Comfort and ease of maintaining. Style is distinctive and very versatile.”

“{c} Has a good fit and wearability. Looks excellent and protects our people.”

“{d} Professional look. Comfort.”

“{e} Fairly comfortable, wears well, hides stains. Looks more professional.”

“{f} Comfortable.”

“{g} {Marked No to the question.} Shirts are hard to get in this style in 100% cotton. Not professional in appearance.”

“{h} {Marked No to the question.} Personnel often mistake employees for other than firefighter/paramedics.”

{I} No comment.

{j} No comment.

“{k} Comfort, costs, disposable.”

{l} No comment.

“{m} The people that wear them like them.”

“{n} You can buy them almost anywhere.”

“{o} Comfortable, functional, acceptable appearance. Dislikes: Different fabrics cause different fade/wear rates. Pants and shirts are thus different color navy blue. I prefer FR fabric.”

{p through u} No comment.

“{v} Comfortable.”

“{w} Comfort. Personnel chose the current uniform. Protective clothing precludes the need for fire retardant work uniforms.”

12) No comments. Yes or no check box.

13) No comments. Yes or no check box.



## **APPENDIX D**

### **PERSONNEL AND PAYROLL**

### **MANSFIELD FIRE DEPARTMENT**

### **ADMINISTRATIVE PROCEDURES**

### **UNIFORMS/INSIGNIA**

**101.60  
FEBRUARY 2000**

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#### **General Guidelines**

1. Uniforms are to be maintained in a neat, clean, and presentable manner. Uniform components that are dirty, soiled, stained, worn, or in disrepair must be cleaned, or if damaged or stained, are to be exchanged for a clean uniform component.
2. Only uniform components permitted under this guideline may be worn.
3. Issued uniform components may not be worn with non-uniform wear at any time.
4. The uniform of the day shall consist of the following items:
  - a) An issued uniform shirt displaying a badge, name tag and authorized insignia.
  - b) An issued uniform tee shirt, with the exception of administrative staff who may wear a white tee shirt.
  - c) Issued navy blue trousers or EMS pants.
  - d) Black socks if visible. White socks may be worn if boots or high top footwear is worn that will hide the socks from view.
  - e) Navy blue department issue caps or approved caps obtained through the MFFA may be worn. Caps must be navy blue in color.
  - f) A black belt must be worn. Supervisors shall utilize a gold belt buckle with the belt.
  - g) Black footwear must be worn. Styles are not dictated as long as the style and appearance is appropriate for wear with the uniform. Shoes must be kept polished and presentable as much as possible.
  - h) Ties are optional with any long sleeve uniform shirt or when a coat is worn. A tie must be worn at funerals or other special occasions as may be deemed appropriate. Ties must be solid black or dark navy blue in color.
5. The uniform of the day must be worn on the following occasions:
  - a) Anytime a crew leaves the station for any activity, except as outlined herein. (See special conditions.)
  - b) Any responses that occur during the hours of 0700 until 1700 hours, except as outlined herein. (See special conditions.)

- c) The uniform of the day must be worn by EMS crews on all calls whenever practical. (While a more relaxed posture may be taken after 1700 hours, it is recognized that the general public feels more comfortable being treated by EMS personnel in a full uniform. It is therefore in our best interest to have EMS personnel in full uniforms whenever possible.)
  - d) Any time station tours or other planned activities will have visitors in the station.
6. Administrative staff and investigators may wear other appropriate clothing as necessary and appropriate from time to time. This may include civilian clothes, coveralls, black logo tee shirts, or golf shirts.
7. Personnel attending schools outside of the City while on duty may wear the uniform of the day, golf shirts if available, or civilian clothes. For hands on classes, the provisions of the special condition section of the policy will apply concerning the wearing of tee shirts and sweatshirts.

### **Special Conditions**

#### **In Station Wear**

- 1) The outer uniform shirt is not required while in the station except when the station is occupied for scheduled station tours or other activities where personnel can expect to be in contact with the general public.
- 2) The outer uniform shirt may be removed to protect it from becoming soiled or damaged during training evolutions, hydrant maintenance, or related activities.
- 3) Personnel involved in fire suppression activities may remove the outer uniform shirt for fire related responses. The outer shirt must be worn on assist EMS and similar calls.

#### **EXCEPTIONS:**

- a) The Shift Commander must wear an outer uniform shirt, vest or other means of identifying him as the IC at all times while performing the duties of the Incident Commander.
  - b) Any personnel who are evaluating fire resistive uniform shirts must make every effort to wear the shirt on all calls during the evaluation period.
- 4) The on duty shift commander may authorize the removal of the outer uniform shirt on a shift by shift basis from May 15<sup>th</sup> through September 15<sup>th</sup> when the heat – humidity index creates a health risk for personnel. It is the shift commander's responsibility to act as a risk manager in this situation. Studies have shown that firefighters receive substantial protection from burn injuries when wearing a uniform shirt over a tee shirt. The risk of a more severe burn injury must be weighed against the risks posed by the heat and the daily activities in making this determination. The shift commander must note the authorization in the Captain's log along with the qualifying criteria. Even if the shift commander has authorized the removal of the outer shirt for a shift, each individual firefighter retains the option of still wearing the outer uniform shirt.

## Workout

- 1) Workout gear may be worn from 0700 until 1000 hours and after 1700 hours while the individual is engaged in physical fitness training during these hours. Workout gear may also be used as sleep clothing after 2000 hours, but the provisions of #2 must be complied with at all times.
- 2) Under no circumstances may shorts or jogging pants be visible on any call. Bunker pants must be worn over shorts or jogging pants on any call.

## Cold Weather

- 1) The department issued jacket or coat may be worn as needed. Gloves, hats and other accessories are permitted as long as they do not present a safety hazard, are dark in color and do not clash with the uniform.
- 2) Uniform sweatshirts may be worn in the station or when performing activities that may result in damage to the uniform coat. Examples would be fire scene overhaul, hydrant maintenance, etc.

## Emergency Recall

- 1) Personnel who are recalled due to an ongoing emergency are not required to meet the provisions of the Guideline. Recalled personnel must wear a uniform tee shirt or uniform sweatshirt as a minimum. Uniform pants or bunker gear pants must be worn when leaving the station.